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YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			EXAMINER PARK, JEONG S	
			ART UNIT 2154	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

mn

# Office Action Summary

Application No.

10/535,208

Applicant(s)

BODIN ET AL.

Examiner

Jeong S. Park

Art Unit

2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 36-70 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 36-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 36-70 are objected to because of the following informalities:

In claim 36, line 5, the word "characterised" should be corrected as –characterized--. Similar correction should be made for claim 53;

In claim 37, line 1, the phrase "data network" should be corrected as –the data network-- for clear understanding of the claim. Similar correction should be made for claims 38-52;

In claim 37, line 2, the phrase "the Internet Protocol, IP, layer" should be corrected as –the Internet Protocol (IP) layer-- for clear understanding of the claim. Similar correction should be made for claim 54;

In claim 48, line 2, the word "centralised" should be corrected as –centralized--. Similar correction should be made for claims 49, 64 and 65;

In claim 60, line 1, the phrase "a third protocol layer" should be corrected as –the third protocol layer-- for clear understanding of the claim; and

In claim 69, line 1, the phrase "a data network" should be corrected as –the data network-- for clear understanding of the claim. Similar correction should be made for claim 70.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 39, 40, 42, 49, 52, 56-58 and 60-62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 39, 40, 56 and 57 recite the limitation "the second network layer" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 42 recites the limitation "the third group" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 49 recites the limitation "said logically centralized unit" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 52 recites the limitation "the DC" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 58 recites the limitation "said third protocol layer" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claims 60-62 recite the limitation "the third network layer" in line 1. There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 69 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 69 is drawn towards a computer program product. The computer program product is not in one of the statutory categories.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 36-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mark et al. (hereinafter Mark)(U.S. Pub. No. 2003/0118019 A1) in view of Porter et al. (hereinafter Porter)(U.S. Pub. No. 2001/0033646 A1).

Regarding claim 36, Mark teaches as follows:

data network implemented by a first network level (IP network in figure 3) having a first addressing scheme (IP data packets 200 in figure 4) and at least a second network level (enhanced packet network 114 in figure 3) having a second addressing scheme (PPP packets 202 in figure 4) each network level provides connectivity over at least one network domain (1<sup>st</sup> enhanced label edge router 116 in figures 3 and 4 connects two networks together, see, e.g., page 3, paragraph [0054] and page 4, paragraph [0062] ), the data network is characterized in that a first group of Network Resource Managers (interpreted as routers in the IP network) is arranged to control the resources of the first network level (controlling resources of a network is the inherent router's function) and a second group of NRMs (routers in the enhanced packet network) is arranged to control the resources of the second network level, wherein the NRMs of the first group and second group comprise means for communicating on a common network level and for exchanging resource requests by using the first

Art Unit: 2154

addressing scheme (two networks communicate via 1<sup>st</sup> E-LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]), wherein the NRMs of the second group (enhanced label multiplexer, 130 in figure 4, which is located inside of 1<sup>st</sup> enhanced label edge router, 116 in figure 4), further comprise means for performing an address mapping between the first and second addressing schemes (enhanced label multiplexer receives user IP data packets and converts them to PPP packets, see, e.g., page 4, paragraph [0063], lines 5-8 and figure 4).

Mark does not explicitly teach the control function of the network resource managers even though any router always manages and controls network resources, such as servers, hosts, and any nodes belong to the router consisting a network.

Porter further teaches as follows:

a resource manager (13 in figures 1 and 2) receives resource requests and allocates resources to the service processing function (19 in figure 2) in response to resource requests (see, e.g., page 2, paragraph [0011], lines 11-13);

the resource manager includes a switch fabric, service processing function, universal directory function, nodal resource manager and nodal resource database (see, e.g., page 2, paragraph [0024] and figure 2);

a nodal resource manager (23 in figure 2, interpreted as a network controller) serves as a gatekeeper to all of the resources belonging to its particular domain (see, e.g., page 3, paragraph [0025], lines 1-3);

a nodal resource database (25 in figure 2, interpreted as a device controller) includes the type of resource and the capabilities of the resource (managing network resource information, see, e.g., page 3, paragraph [0026], lines 1-8); and

the provision of network services, such as routing, occurs as an interaction among service processing function, universal directory function, and nodal resource manger (functioning as a router, see, e.g., page 3, paragraph [0027], lines 1-7).

Therefore Porter teaches a node, resource manager, serves as a gateway or edge router to all of the network resources belonging to its particular domain (network).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mark to include a plurality of nodes, resource managers, serve as a gateway or edge router to all of the network resources belonging to their particular domain (network), as taught by Porter in order to utilize the existing gateway or edge router as a network resource manager.

Regarding claims 37 and 54, Mark teaches as follows:

the first network level is the Internet Protocol, IP, layer (see, e.g., page 4, paragraph [0062], lines 1-4).

Regarding claims 38, 46, 55 and 62, Mark teaches as follows:

the second network level or the third network layer is a link protocol layer (Point-to-Point Protocol is well known data link layer protocol, see, e.g., page 4, paragraph [0063], lines 5-8 and for further reference see RFC 1662).

Regarding claims 39 and 57, Mark teaches as follows:

the second network layer (enhanced packet network 114 in figure 3) is a second protocol layer (PPP protocol in figure 5A) controlling an overlay network on top of said IP layer (see, e.g., page 4, paragraph [0065] and figure 5A).

Regarding claims 40 and 56, Mark teaches as follows:

the second network layer (enhanced packet network 114 in figure 3) is a second IP layer (PPP protocol in figure 5A) controlling an overlay network on top of said IP layer (see, e.g., page 4, paragraph [0065] and figure 5A).

Regarding claim 41, Mark teaches as follows:

a third network level (interpreted as another second network level as explained above, enhanced packet network 114 in figure 3) having a third addressing scheme (PPP packets 202 in figure 4), the resources of said third protocol layer is controlled by a third group of NRMs comprising means for exchanging resource requests with NRMs of the first network level using the first addressing scheme (two networks communicate via 1<sup>st</sup> E-LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]).

Regarding claim 42, Mark teaches as follows:

the NRMs of the third group further comprise means for performing an address mapping between the first and third addressing schemes (enhanced label multiplexer receives user IP data packets and converts them to PPP packets, see, e.g., page 4, paragraph [0063], lines 5-8 and figure 4).

Regarding claims 43, 45 and 60, Mark teaches as follows:



the third network layer is a third protocol layer (PPP protocol in figure 5A) controlling an overlay network on top of said IP layer (see, e.g., page 4, paragraph [0065] and figure 5A).

Regarding claims 44 and 61, Mark teaches as follows:

the third network layer is a second IP layer (PPP protocol in figure 5A) controlling an overlay network on top of said IP layer (see, e.g., page 4, paragraph [0065] and figure 5A).

Regarding claims 47 and 63, Mark teaches as follows:

the NRMs (1<sup>st</sup> E-LER 116 in figure 3) within at least one of said groups are arranged in a hierarchical structure arranged to communicate with each other (the edge router communicates 1<sup>st</sup> IP network with network layer and also communicates E-LSR with data link layer, see, e.g., page 4, paragraph [0063], therefore the 1<sup>st</sup> E-LER is arranged in a hierarchical structure shown at least with two layers).

Regarding claims 48, 49, 64 and 65, Mark teaches as follows:

each of the NRMs (routers) is a logically centralized unit in a network and said logically centralized unit is distributed or backed up over several physical servers (it is inherent that network devices including servers and hosts are all connected to the routers to communicate with other networks).

Regarding claims 50 and 66, Mark teaches as follows:

the data network in at least one of the network levels comprises a Network Controller (NC) comprising means for receiving a request from an NRM (enhanced label multiplexer 130 receives OAM frames 204 and signaling frame 206 from IP network

router, see, e.g., page 4, paragraph [0063], lines 8-10 and figure 4) and means for obtaining detailed information such as topology maps, traffic measurement information, alarms of the network domain that is controlled by said NRM in response to said request (MPLS provides OAM&P (Operation, Administration, Maintenance, and Provisioning) capabilities which permit the operator of the network to interrogate and control the operation of the network, see, e.g., page 1, paragraph [0007]).

Regarding claims 51, 52, 67 and 68, Mark teaches all the limitations of claim except for as follows:

means for receiving a request from the NC;

means for controlling vendor specific node technologies in response to said request; and

co-location of the DC and NC in at least one of the network domains.

Porter teaches as follows:

resource manager (13 in figures 1 and 2) receives resource requests and allocates resources to the service processing function (19 in figure 2) in response to resource requests (see, e.g., page 2, paragraph [0011], lines 11-13);

the resource manager includes a switch fabric, service processing function, universal directory function, nodal resource manager and nodal resource database (see, e.g., page 2, paragraph [0024] and figure 2);

a nodal resource manager (23 in figure 2, interpreted as a network controller) serves as a gate keeper to all of the resources belonging to its particular domain (see, e.g., page 3, paragraph [0025], lines 1-3); and

a nodal resource database (25 in figure 2, interpreted as a device controller) includes the type of resource and the capabilities of the resource (see, e.g., page 3, paragraph [0026], lines 1-8).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mark to include a nodal resource manager, as taught by Porter in order to efficiently collect traffic information from all network devices.

Regarding claims 53, 69 and 70, Mark teaches as follows:

a method in a data network implemented by a first network level (IP network in figure 3) having a first addressing scheme (IP data packets 200 in figure 4) and at least a second network level (enhanced packet network 114 in figure 3) having a second addressing scheme (PPP packets 202 in figure 4) each network level provides connectivity over at least one network domain (two networks communicate via 1<sup>st</sup> E-LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]), the method is characterized in that it comprises the steps of:

controlling the resources of the first network level by a first group of Network Resource Managers (interpreted as routers in the IP network)(controlling resources of a network is the inherent router's function);

controlling the resources of the second network level by a second group of NRMs, wherein the first group and the second group of NRMs comprises means for communicating on a common network level (two networks communicate via 1<sup>st</sup> E-LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]);

exchanging resource requests between NRMs of the first and second group by using the first addressing scheme (two networks communicate via 1<sup>st</sup> E-LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]); and

performing an address mapping between the first and second addressing schemes (enhanced label multiplexer receives user IP data packets and converts them to PPP packets, see, e.g., page 4, paragraph [0063], lines 5-8 and figure 4).

Mark does not explicitly teach the control function of the network resource managers even though a router always manages and controls network resources, such as servers, hosts, and any nodes belong to the router consisting a network.

Porter further teaches as follows:

a resource manager (13 in figures 1 and 2) receives resource requests and allocates resources to the service processing function (19 in figure 2) in response to resource requests (see, e.g., page 2, paragraph [0011], lines 11-13);

the resource manager includes a switch fabric, service processing function, universal directory function, nodal resource manager and nodal resource database (see, e.g., page 2, paragraph [0024] and figure 2);

a nodal resource manager (23 in figure 2, interpreted as a network controller) serves as a gate keeper to all of the resources belonging to its particular domain (see, e.g., page 3, paragraph [0025], lines 1-3);

a nodal resource database (25 in figure 2, interpreted as a device controller) includes the type of resource and the capabilities of the resource (managing network resource information, see, e.g., page 3, paragraph [0026], lines 1-8); and

the provision of network services, such as routing, occurs as an interaction among service processing function, universal directory function, and nodal resource manger (functioning as a router, see, e.g., page 3, paragraph [0027], lines 1-7).

Therefore Porter teaches a node, resource manager, serves as a gateway or edge router to all of the network resources belonging to its particular domain (network). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mark to include a plurality of nodes, resource managers, serve as a gateway or edge router to all of the network resources belonging to their particular domain (network), as taught by Porter in order to utilize the existing gateway or edge router as a network resource manager.

Regarding claim 58, Mark teaches as follows:

a third network level (interpreted as another second network level as explained above, enhanced packet network 114 in figure 3) having a third addressing scheme (PPP packets 202 in figure 4), and the method comprises the further step of:

controlling the resources of said third protocol layer by a third group of NRMs (interpreted as routers in the IP network)(controlling resources of a network is the inherent router's function); and

exchanging resource requests between any of the NRMs of the first and second network level using the first addressing scheme (two networks communicate via 1<sup>st</sup> E-

Art Unit: 2154

LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]).

Regarding claim 59, Mark teaches as follows:

performing an address mapping between the first and third addressing schemes (enhanced label multiplexer receives user IP data packets and converts them to PPP packets, see, e.g., page 4, paragraph [0063], lines 5-8 and figure 4).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeong S. Park whose telephone number is 571-270-1597. The examiner can normally be reached on Monday through Thursday 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2154

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JP

August 2, 2007

Supervisory Patent Examiner  
NATHAN L. RYNN  
PAIR EXAMINER